

0056938

Client: TNU-HANFORD B02-007

LVL#: 0111L292

SDG/SAF #: H1600/B02-007

W.O. #: 11343-606-001-9999-00 **Date Received: 11-07-2001** 



#### GC/MS VOLATILE

One (1) water sample was collected on 11-02-2001.

The sample and its associated QC samples were analyzed according to criEDM 6th in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL Volatile target compounds on 11-14-2001.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
- 2. The analysis holding time was met.
- 3. Non-target compounds were detected in the sample.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA OC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than 3x the CRQL.
- 8. Internal standard area and retention time criteria were met.
- 9. A spectral search was performed for Decane; however, it was not detected in the samples.
- 10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

J. Michael Taylor

President

Lionville Laboratory Incorporated

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The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 1 pages. 02

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

Date

### **GLOSSARY OF VOA DATA**

### **ABBREVIATIONS**

BS	æ	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	-	Indicates matrix spike.
MSD	-	Indicates matrix spike duplicate.
DL		Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	-	Dilution Factor.
NR	-	Not Required.
SP, Z	=	Indicates Spiked Compound.



#### **GLOSSARY OF VOA DATA**

#### DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



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#### TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.





Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 11/28/01 14:29 RFW Batch Number: 0111L292 Client: TNUHANFORD B02-007 H1600 Work Order: 11343606001 Page: 1a

	Cust ID:	B13D86	5	B13D8	5	B13D8	6	VBLKYZ		VBLKYZ BS		
Sample Information	RFW#: Matrix: D.F.: Units:	001 WATER 1.( ug/I	0	001 M WATER 1.6 ug/l	00	001 MS WATER 1.4	00	01LVH481-1 WATER 1. ug/	00	01LVH481-1 WATER 1.0 ug/l	00	
	luene-d8	99	*	99	8	100	*	100	*	100	*	<del></del>
Surrogate Bromofluor		86	<b>8</b> €.	90	*	90	*	87	*	89	*	
Recovery 1,2-Dichloroe		101	* - £1 -	101	*	101	<b>₹</b>	96	*	96	*	
		 10	.≤IT==	10	.=IT=:	======: 10	Ω π±Στ	10	==I1 U			=*======f1
Chloromethane		-	U	10	Ū	10	U	10	IJ	10	Ŭ	
Vinyl Chloride		10	ซ	10	-	10	ប	10	נו	10	U	
Chloroethane		10	บ	10	_	10	IJ	10	บ	10	U U	
Methylene Chloride		7	В	8	B	5	В	10	U	10 11	_	
Acetone		. 10	Ü	10	ט	10	U	. 10	Ū	10	U	
Carbon Disulfide		5	Ü	5	Ū	5	U	. 10	IJ	5	ט	
1,1-Dichloroethene		5	U	79	<b>%</b>	79	*	5	U	80	8	
1,1-Dichloroethane		5	U	5	U	5	Ū	5	ū	5	<b>.</b>	
1,2-Dichloroethene (total	<del></del>	5	Ü	5	บ	5	IJ	5	ū	5	n o	
Chloroform	′	5	U	5	U	5	U	5	U	5	tī	
1,2-Dichloroethane		5	Ū	5	U	5	ij	5	Ū	5	บ	
2-Butanone	<del></del>	10	Ū	10	Ū	10	U	10	U	10	IJ	
1,1,1-Trichloroethane			U	5	Ū	5	Ū	5	U	5	ū	
Carbon Tetrachloride		5	Ū	5	Ū	5	n	5	Ū	5	Ū	
Bromodichloromethane		5	U	5	Ū	5	Ū	5	Ū	5	Ū	
1,2-Dichloropropane		5	U	5	U	5	U	5	Ū	5	Ū	
cis-1,3-Dichloropropene_		5	U	5	Ū	5	Ū	5	Ū	5	Ū	
Trichloroethene		5	U	99	*	99	ક	5	Ū	98	*	
Dibromochloromethane		5	U	5	Ū	5	Ū	5	U	5	Ū	
1,1,2-Trichloroethane		5	U	5	Ū	5	Ū	5	U	5	Ū	
Benzene		5	U	101	*	102	욯	5	U	100	*	
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	Ū	
Bromoform		5	U	5	Ū	5	U	5	U	5	Ū	
4-Methyl-2-pentanone		10	U	10	U	10	U	10	Ū	10	Ū	
2-Hexanone		10	U	10	U	10	U	10	U	10	Ū	
Tetrachloroethene		5	U	5	U	5	U	5	Ū	5	Ū	
1,1,2,2-Tetrachloroethane		5	U	5	Ū	5	U	5	Ū	5	Ü	
Toluene		5	U	106	*	108	ક	5	U	106	*	
*= Outside of EPA CLP QC	limits.											

RFW Batch Number: 0111L2	92 Clie	nt: TNU	IANFORI	B02-007	H160	0 Work (	rde	r: 11343606	001	Page: 1b	5	
	Cust ID:	B13D86	3	B13D86	5	B13D86	5	VBLKYZ		VBLKYZ BS		7
	RFW#:	001		001 M	3	001 MSI	)	01LVH481-M	B1	01LVH481-N	Œ1	
Chlorobenzene		5	Ü	101	ક	101	*	5	U	99	- <del>-</del> -	
Ethylbenzene		5	Ü	5	Ū	5	U	5	Ü	5	U	
Styrene		5	U	5	U	5	U	5	U	5	U	
Xylene (total)		5	U	5	U	5	U	5	U	5	Ü	

<sup>\*=</sup> Outside of EPA CLP QC limits.

#### VOLATILE ORGANICS ANALYSIS SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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Lab Name: Lionville Labs. Inc. Work Order: 11343606001

Client: TNUHANFORD B02-007 H1600

Matrix:

WATER

Lab Sample ID: 0111L292-001

CLIENT SAMPLE NO.

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h111413

Level: (low/med) LOW

Date Received: <u>11/07/01</u>

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: <u>11/14/01</u>

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 2

(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
İ	1.	SILOXANE	18.291	6	J
ĺ	2.	SILOXANE	22.219	10	J
				l	l

1E

VOLATILE ORGANICS ANALYSIS SHEET TENTATIVELY IDENTIFIED COMPOUNDS CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B02-007\_H1600

Matrix:

WATER

Lab Sample ID: 01LVH481-MB1

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: h111404

Level: (low/med) LOW

Date Received: 11/14/01

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 11/14/01

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 0

(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	   RT	EST. CONC.	Ω
1.	**********			

Lionville	Laboratory	Use	Only
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# Custody Transfer Record/Lab Work Request Page \_\_\_\_\_\_ of \_\_\_\_\_

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#### **Analytical Report**

Client: TNU HANFORD B02-007

LVL#: 0111L292

SDG/SAF#: H1600/B02-007

**W.O.#:** 11343-606-001-9999-00

Date Received: 11-07-01

#### GC SCAN

One (1) water sample was collected on 11-02-01.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on Method 8015 for target compounds Ethanol and n-Propyl Alcohol on 11-19-01.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
- 2. The sample was packaged and stored as specified in the method protocol.
- 3. Surrogates are not currently employed in the methodology.
- 4. All initial calibrations were within acceptance criteria.
- 5. All continuing calibrations run prior to analysis were within acceptance criteria.
- 6. All blank spike recoveries were within acceptance criteria.
- 7. All matrix spike recoveries were within acceptance criteria.
- 8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

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Députy Laboratory Manager

Lionville Laboratory Incorporated

Date

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The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.



#### GLOSSARY OF GC VOLATILES DATA

#### **DATA QUALIFIERS**

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

#### **ABBREVIATIONS**

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- **BSD** = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



#### **GLOSSARY OF GC VOLATILES DATA**

- P = This flag is used for an GC VOLATILES target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC VOLATILES.

#### Lionville Laboratory, Inc.

GC SCAN Report Date: 11/28/01 14:25 PRFW Batch Number: 0111L292 Client: TNUHANFORD B02-007 H1600 Work Order: 11343606001 Page: 1

	Cust ID:	B13D86	B13D86	B13D86	BLK	BLK BS	BLK BSD
Sample	RFW#:	001	001 MS	001 MSD	01LJMB19-MB1	01LJMB19-MB1 WATER	01LJMB19-MB1 WATER
Information	Matrix:			,		•	
	D.F.:	1.00	1.00		1,00	1.00	1.00
	Units:	x: WATER WATER WATER WATER  1.00 1.00 1.00 1.00 1.00  s: mg/L mg/L mg/L mg/L	mg/L	mg/L	mg/L		
		======f1==	======fl=	=======f	l======f1	.=======f]	fl
n-Propyl Alcohol		5.0 U	98 %	94 %	5.0 Ü	99 %	94 %
Ethanol		5.0 U	101 %	98 %	5.0 บั	103 %	98 %

U= Analyzed, not detected. J≈ Present below detection limit. B= Present in blank. NR≈ Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

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Sludge Water	001	B13D86	MS X	MSD X	w	1701	0530	<u> </u>		<del> </del>								+	┿	<del> </del>	-	╀
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Orum Solids			1	<del>                                     </del>		<del>                                     </del>							1				<del>                                     </del>	<del>                                     </del>	†	<del>                                     </del>	<del>                                     </del>	$\vdash$
Drum Liquids EP/TCLP			1													<u> </u>		1	1		<u> </u>	<del> </del>
Leachate Wipe	<del></del>																	1				
Other Fish																						
{																		<u> </u>	<b></b>	<u> </u>	<u> </u>	_
				<u> </u>													<u>                                     </u>	<u> </u>	<b></b>			<del>  -</del>
			1	<u> </u>			Ĺ <u>.</u>	لـــا														<u></u>
cial Instructi	ons:	SAF # B0 2-007		DATE	REVISION	IS:													oratory			
OGCSC	. Pr	aponul, Ethanel				2										nples t Shippe nd Deli	d		1)	•	istant Ser 1-en Ou 47)or	iter

Received Reimquished Date Time by by 0/5:3 1/7/01

Relinquished by	Received by	Dete ORIGIN	Time
COMPOSIT		*EWRI	
WASTE	ŀ	ENVI	12.1

Discrepancies Between Samples Labels and COC Record? Y or NOTES:

4235 7954 8729

- 4) Samples
  Properly Preserved
  or N
- 5) Received Within Holding Times

**COC Record Present** Upon Sample Rec't

Cooler 5.6 °C

Bechtel Hanfor	rd Inc.		HAIN OF CUST	CODY/S	AMP	LE ANAL	YSIS	REQU	EST	[]	B02-007-05	Lage I	OI T
Collector Watson, D/Bowers DL			Company Contact Telephone No. Cearlock, CS 372-9638				Project Coordinator TRENT, SJ		Price Code 7N		Data Turnaround		
Project Designation 200 Area Source Characterization 200-CS-1 OU - QC Samplin		Samplin 200	1					SAF No. B02-007		Air Quality 🔲		45 Days	
Ice Chest No. 5 MC	382		Logbook No. 551		COA B20C	S1673C		Method o Fed Ex	f Shipment				
Shipped To D3W		Offsite	Property No.	220	03	32		Bill of La		1295L	(-87	29	
POSSIBLE SAMPLE HAZA Samples did not originate i radiological controlled are total activity associated with sample/samples.	in • No		Preservation	HCl to pH <2. Cool 4C aGs+									
Special Handling and/or	otor#ge		Type of Container	1								<b>├</b>	<u> </u>
			No. of Container(s)  Volume	40mL			<del> </del>	<u> </u>					
	SAMPLE ANAL	YSIS		VOA - 8260A (TCL); VOA - 8260A (Add- On) (I- Propenol, Ethanol)									
Sample No.	Matrix *	Sample Date	Sample Time										
B13D86	WATER	11/2/01	0530	X									
				ļ <u></u>			<b> </b>						
				ļ			<u> </u>	_					<u> </u>
				<del> </del>			<u> </u>	_					
CHAIN OF POSSESSIO	<u>_</u>	Sign/Print	Numer	<u> </u>	10	PECIAL INSTI	l l					L	Matrix *
Relinquished By/Removed From  OS w475on/ Eller  Relinquished By/Removed From  L. A. D. 3. B. 3.	Date/Time 11/5   1/2/01 11/5   Date/Time 70	Recoived By/Store REF - BP Ortegives By/Store	s 3,08 s.g. 1	1/2/01 te/Time 1-(0:01	5	Laboratory is to     The ERC acknow     The laboratory is	measure p wledges th	H within 24 h c 48-hour hol	ding time will no	t be met for Nit		hod 300.0.	S=Soil SB=Setiment SO=Solid SI=Shelpe W=Water O=Oil
Relinquished By/Removed From	Date/Time		Samples stored in Ref.#3 But to Shipping Facility on 11/2/20 Collector not available to relence samples on 11/6/01 for shipping Facility on 11/6/01 for shipping Faci				Int the 3728	A-Air DS-Dram Soil DL-Dram Lie TerTimue					
	Date Ble 11.7 C.	Received By/Styre	11.701 Della De	15:25 te/Time		Collector n samples on	I AVAIL	able to re / <u>///</u> for :	shipment.	T 11-6	n'Ol		WinWipe L=Liquid V=Veptation X=Other
Relinquished By/Removed From	Date/Time	Received By/Store	ed In Da	te/Time					•		•		
LABORATORY Received By SECTION				Titl	e e					<u> </u>	D	ate/Time	<del></del>
FINAL SAMPLE Disposal Me DISPOSITION	thod			<del></del>		Dispo	sed By				Đ	ate/Tinye	
DIU SE 044 (40/00)													

## Figure 1. Sample Check-in List

ate/Time Received: 11.7.01/ 15:25		•
DG#: 0111L292	-	· · · · · · · · · · · · · · · · · · ·
Vork Order Number:	SAF#	302.007
hipping Container IDSML 382	Chain of Custo	ody # 802 -007-05
. Custody Seals on shipping container intact?	•	Yes (13 No []
Custody Scals dated and signed?		Yes [4 No []
3. Chain-of-Custody record present?		Yes [ No [ ]
4. Cooler temperature 5.6	٥ د	
5. Vermiculite/packing materials is		West Dry 14
6. Number of samples in shipping container:		
7. Sample holding times exceeded?		Yes [] No [4]
8. Samples have:tape	hazard labels appropriate sam	ple labels
broken	_leaking _have air bubble	
<ul><li>10. Were any anomalies identified in sample r</li><li>11. Description of anomalies (include sample)</li></ul>	eceipt? numbers):	Yes [] No [9
Sample Custodian/Laboratory		
Telephoned to:	On	By
		_